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Anti-EIF2S1 (pS51) Antibody

Rabbit polyclonal antibody to EIF2S1 (pS51)
Catalog # AP59543

Specification

Anti-EIF2S1 (pS51) Antibody - Product Information

Application	**WB, IP, IHC**
Primary Accession	P05198
Other Accession	Q6ZWX6
Reactivity	**Human, Mouse, Rat, Zebrafish, Pig, Chicken, Bovine**
Host	**Rabbit**
Clonality	**Polyclonal**
Calculated MW	**36112**

Anti-EIF2S1 (pS51) Antibody - Additional Information

Gene ID 1965

Other Names
EIF2A; Eukaryotic translation initiation factor 2 subunit 1; Eukaryotic translation initiation factor 2 subunit alpha; eIF-2-alpha; eIF-2A; eIF-2alpha

Target/Specificity
KLH-conjugated synthetic peptide encompassing a sequence within the center region of human EIF2S1. The exact sequence is proprietary.

Dilution
WB~~WB (1/500 - 1/1000), IH (1/100 - 1/200), IP (1/10 - 1/100)
IP~~N/A
IHC~~1:100~500

Format
Liquid in 0.42% Potassium phosphate, 0.87% Sodium chloride, pH 7.3, 30% glycerol, and 0.09% (W/V) sodium azide.

Storage
Store at -20 °C.Stable for 12 months from date of receipt

Anti-EIF2S1 (pS51) Antibody - Protein Information

Name EIF2S1 (HGNC:3265)

Synonyms EIF2A

Function
Member of the eIF2 complex that functions in the early steps of protein synthesis by forming a ternary complex with GTP and initiator tRNA (PubMed:<a

href="http://www.uniprot.org/citations/16289705" target="_blank">16289705, PubMed:38340717). This complex binds to a 40S ribosomal subunit, followed by mRNA binding to form a 43S pre- initiation complex (43S PIC) (PubMed:16289705). Junction of the 60S ribosomal subunit to form the 80S initiation complex is preceded by hydrolysis of the GTP bound to eIF2 and release of an eIF2-GDP binary complex (PubMed:16289705). In order for eIF2 to recycle and catalyze another round of initiation, the GDP bound to eIF2 must exchange with GTP by way of a reaction catalyzed by eIF2B (PubMed:16289705). EIF2S1/eIF2-alpha is a key component of the integrated stress response (ISR), required for adaptation to various stress: phosphorylation by metabolic-stress sensing protein kinases (EIF2AK1/HRI, EIF2AK2/PKR, EIF2AK3/PERK and EIF2AK4/GCN2) in response to stress converts EIF2S1/eIF2-alpha in a global protein synthesis inhibitor, leading to an attenuation of cap-dependent translation, while concomitantly initiating the preferential translation of ISR-specific mRNAs, such as the transcriptional activators ATF4 and QRICH1, and hence allowing ATF4- and QRICH1-mediated reprogramming (PubMed:19131336, PubMed:33384352, PubMed:38340717). EIF2S1/eIF2-alpha also acts as an activator of mitophagy in response to mitochondrial damage: phosphorylation by EIF2AK1/HRI promotes relocalization to the mitochondrial surface, thereby triggering PRKN-independent mitophagy (PubMed:38340717).

Cellular Location
Cytoplasm, Stress granule {ECO:0000250|UniProtKB:Q6ZWX6}. Cytoplasm, cytosol {ECO:0000250|UniProtKB:P56286}. Mitochondrion. Note=Colocalizes with NANOS3 in the stress granules (By similarity). Relocalizes to the surface of mitochondria in response to mitochondrial damage and phosphorylation by EIF2AK1/HRI (PubMed:38340717). {ECO:0000250|UniProtKB:Q6ZWX6, ECO:0000269|PubMed:38340717}

Anti-EIF2S1 (pS51) Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Anti-EIF2S1 (pS51) Antibody - Images

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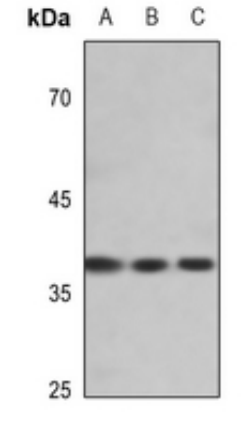
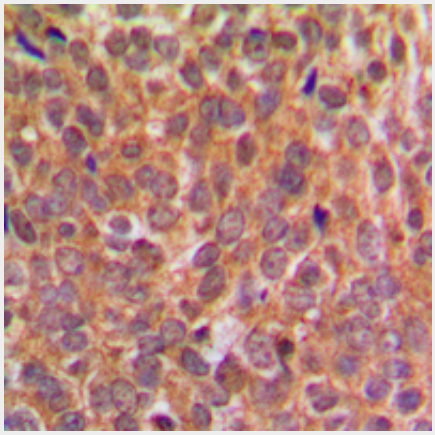


Western blot analysis of EIF2S1 (pS51) expression in A549 (A), mouse kidney (B), mouse lung (C) whole cell lysates.



Immunohistochemical analysis of EIF2S1 (pS51) staining in human breast cancer formalin fixed paraffin embedded tissue section. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0). The section was then incubated with the antibody at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.

Anti-EIF2S1 (pS51) Antibody - Background

KLH-conjugated synthetic peptide encompassing a sequence within the center region of human EIF2S1. The exact sequence is proprietary.